

Clamshell Door Failure



On 26 Jan 05 the fabric seam of a Clamshell style aircraft shelter door failed catastrophically, causing it to fall to the ground and narrowly miss personnel and the tail of an aircraft parked in the structure.

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The Clamshell door was in the closed position as shown in the photo when the failure occurred. The failure started in the indicated area and the door fell in an “accordion” style to the ground. In the shown configuration the door structure is reliant on the fabric seam which attaches to the front structural arch of the facility. The door is raised and lowered by two steel cables running along the front outside which are attached to a winch and pulley system. As the door is opened the tension is transferred from the fabric seam to the steel cables.

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The fabric seam at the top of the mishap Clamshell door had been ripped similar to the door in the picture for approximately a month prior to the failure. Prior to the mishap it was not realized that the fabric seam was an integral part of the door support design. The material to fix the door was on the base and the Statement of Work for the contract was being finalized at the time of the mishap. The structure is produced by

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Witnesses to the mishap stated that the door had been opened earlier in the day to move equipment into the hangar. After the door was closed the tear had had grown from the top and traveled almost all the way down the left side. The door failed shortly after this

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Suggest that any installation with these type of structures and doors pay close attention to the condition of the fabric doors. Even minor tears may be the beginning of a failure. The door structure is most stable when in the open configuration, the tension is taken from the fabric seam and